

Maine Revised Statutes
Title 38: WATERS AND NAVIGATION
Chapter 3: PROTECTION AND IMPROVEMENT OF WATERS

§490-Z. PERFORMANCE STANDARDS FOR QUARRIES

1. Significant wildlife habitat and other protected areas. Affected land may not be located in, on or over a significant wildlife habitat or other type of protected natural resource, as defined in section 480-B, or in an area listed pursuant to the Natural Areas Program, Title 12, section 544. The department may allow excavation to occur under this section as long as a permit is obtained pursuant to article 5-A. Permit requirements for certain excavations in, on or over high and moderate value inland waterfowl and wading bird habitat are also governed by section 480-GG.

[2009, c. 293, §6 (AMD) .]

2. Solid waste. Solid waste, including stumps, wood waste and land-clearing debris generated on the affected land must be disposed of in accordance with chapter 13, including any rules adopted to implement those laws. The department may not grant a variance from the provisions of this subsection.

[1995, c. 700, §35 (NEW) .]

3. Groundwater protection. To ensure adequate groundwater protection, the following setback requirements must be met.

A. A 200-foot separation must be maintained between an excavation and a private drinking water supply that is point driven or dug and was in existence prior to the excavation. [1995, c. 700, §35 (NEW) .]

B. A 100-foot separation must be maintained between an excavation and a private drinking water supply that is drilled into saturated bedrock and was in existence prior to the excavation. [1995, c. 700, §35 (NEW) .]

C. Separation must be maintained between an excavation and a public drinking water source as follows:

- (1) For systems serving a population of 500 persons or less, the minimum separation must be 300 feet;
- (2) For systems serving a population of 501 persons up to 1,000 persons, the separation must be 500 feet;
- (3) For systems serving a population of more than 1,000 persons, the separation must be 1,000 feet; and
- (4) For any system that holds a valid filtration waiver in accordance with the federal Safe Drinking Water Act, 42 United States Code, Sections 300f to 300j-26 (1988), the separation must be 1,000 feet. [1995, c. 700, §35 (NEW) .]

D. Refueling operations, oil changes, other maintenance activities requiring the handling of fuels, petroleum products and hydraulic fluids and other on-site activity involving storage or use of products that, if spilled, may contaminate groundwater, must be conducted in accordance with the department's spill prevention, control and countermeasures plan. Petroleum products and other substances that may contaminate groundwater must be stored and handled over impervious surfaces that are designed to contain spills. The spill prevention, control and countermeasures plan must be posted at the site. [1995, c. 700, §35 (NEW) .]

E. In the event of excavation below the seasonal high water table, a 300-foot separation must be maintained between the limit of excavation and any predevelopment private drinking water supply and a 1000-foot separation must be maintained between the limit of excavation and any public drinking water source or area previously designated for potential use as a public drinking water source by a municipality or private water company. [1995, c. 700, §35 (NEW).]

The department may grant a variance from the provisions of paragraph C upon consultation with the person or entity that controls the public drinking water supply affected by the excavation. The department may not grant a waiver from the provisions of paragraph A, B or D.

Excavation below the seasonal high water table is prohibited. The department may grant a variance allowing excavation below the seasonal high water table if the applicant demonstrates that the yield of groundwater flow to protected waters or wetlands or public drinking water sources or private drinking water supplies will not be adversely affected by the excavation.

In the event of excavation below the seasonal high water table, the operator of a mining activity that affects by excavation activities a public drinking water source or private drinking water supply by contamination, interruption or diminution must restore or replace the affected water supply with an alternate source of water, adequate in quantity and quality for the purpose served by the supply. This provision is not intended to replace any independent action that a person may have whose water supply is affected by a mining activity.

[2005, c. 158, §11 (AMD) .]

4. Natural buffer strip. Existing vegetation within a natural buffer strip may not be removed. If vegetation within the natural buffer strip has been removed or disturbed by the excavation or activities related to operation of a quarry before submission of a notice of intent to comply, that vegetation must be reestablished as soon as practicable after filing the notice of intent to comply. The department may not grant a variance from the provisions of this subsection.

[1995, c. 700, §35 (NEW) .]

5. Protected natural resource buffers. A natural buffer strip must be maintained between the working edge of an excavation and a river, stream, brook, great pond or coastal wetland as defined in section 480-B. A natural buffer strip must also be maintained between the working edge of an excavation and certain freshwater wetlands as defined in section 480-B and have the characteristics listed in paragraph B. Excavation activities conducted within 100 feet of a protected natural resource must comply with the applicable permit requirements under article 5-A. The width requirements for natural buffer strips are as follows.

A. A natural buffer strip at least 100 feet wide must be maintained between the working edge of the excavation and the normal high-water line of a great pond classified as GPA, a river flowing to a great pond classified as GPA or a segment of the Kennebec River identified in Title 12, section 403, subsection 7. [2007, c. 616, §7 (AMD) .]

B. A natural buffer strip at least 75 feet wide must be maintained between the working edge of the excavation and a body of water other than as described in paragraph A, a river, stream or brook, coastal wetland or significant wildlife habitat contained within a freshwater wetland consisting of or containing:

- (1) Under normal circumstances, at least 20,000 square feet of aquatic vegetation, emergent marsh vegetation or open water, except for artificial ponds or impoundments; or
- (2) Peat lands dominated by shrubs, sedges and sphagnum moss. [1995, c. 700, §35 (NEW) .]

For purposes of this subsection, the width of a natural buffer strip is measured from the upland edge of a floodplain wetland. If no floodplain wetlands are present, the width is measured from the normal high-water mark of the river, stream or brook. The width is measured from the normal high-water mark of a great pond and upland edge of a freshwater or coastal wetland.

The department may allow excavation to occur under this subsection as long as a permit is obtained pursuant to article 5-A. A quarry is not eligible for a permit by rule under department rules regarding activities adjacent to a protected natural resource.

[2007, c. 616, §7 (AMD) .]

6. Roads. A natural buffer strip must be maintained between the working edge of an excavation and a road or right-of-way as follows.

A. A natural buffer strip at least 150 feet wide must be maintained between the working edge of an excavation and a road designated as a scenic highway by the Department of Transportation. [1995, c. 700, §35 (NEW) .]

B. A natural buffer strip at least 100 feet wide must be maintained between the working edge of the excavation and any other public road. A natural buffer strip at least 50 feet wide must be maintained between the working edge of an excavation and any public right-of-way that does not contain a road. The width of a natural buffer strip adjacent to a public road or right-of-way may be reduced if there is a public entity or entities with authority to grant permission and the applicant receives permission from each authority in writing. [2005, c. 158, §12 (AMD) .]

C. A natural buffer strip at least 50 feet wide must be maintained between the working edge of an excavation and a private road or a right-of-way. If a private road is contained within a wider right-of-way, the buffer is measured from the edge of the right-of-way. The width of the natural buffer strip adjacent to a private road may be reduced if the applicant receives written permission from the persons having a right-of-way over the private road. [1995, c. 700, §35 (NEW) .]

The department may not grant a variance from the provisions of paragraph A or C. The department may grant a variance from paragraph B if the variance does not result in the natural buffer strip being reduced to less than 50 feet between the working edge of the excavation and any road or right-of-way, whichever is farther from the excavation, and if the owner or operator installs visual screening and safety measures as required by the department.

A distance specified in this subsection is measured from the outside edge of the shoulder of the road or edge of the right-of-way unless otherwise specifically provided.

[2005, c. 158, §12 (AMD) .]

7. Property boundary. A natural buffer strip at least 100 feet wide must be maintained between an excavation and any property boundary. This distance may be reduced to 10 feet with the written permission of the affected abutting property owner or owners, except that the distance may not be reduced to less than 25 feet from the boundary of a cemetery or burial ground. The natural buffer strip between quarries owned by abutting owners may be eliminated with the abutter's written permission if the elimination of this natural buffer strip does not increase the runoff from either excavation across the property boundary. Any written permission to reduce a buffer must provide that it remains in effect until mining ceases and must be recorded in the registry of deeds. All property boundaries must be identified in the field by markings such as metal posts, stakes, flagging or blazed trees. The department may not grant a variance from the provisions of this subsection.

[2005, c. 158, §12 (AMD) .]

8. Erosion and sedimentation control. A working pit must be naturally internally drained at all times unless a variance is obtained from the department. Stockpiles consisting of topsoil to be used for reclamation must be seeded, mulched or otherwise temporarily stabilized.

A. Sediment may not leave the parcel or enter a protected natural resource. [1995, c. 700, §35 (NEW) .]

B. Grubbed areas not internally drained must be stabilized. [1995, c. 700, §35 (NEW) .]

C. Erosion and sedimentation control for access roads must be conducted in accordance with the department's best management practices for erosion and sedimentation control. [2005, c. 561, §4 (AMD).]

D. All areas other than a working pit area that are not naturally internally drained must meet the erosion and sedimentation control standards of section 420-C. [2005, c. 561, §4 (NEW).]

The department may not grant a variance from the provisions of paragraph A, B, C or D. Areas are not considered "naturally internally drained" if surface discharge is impeded through the use of structures such as detention ponds, retention ponds and undersized culverts.

[2005, c. 561, §4 (AMD) .]

9. Water quality protection and storm water management. Standards of the laws governing storm water management and waste discharge must be met as provided in this subsection.

A. A variance must be obtained and storm water standards adopted pursuant to section 420-D must be met for any part of a project, other than the working pit area, that is not naturally internally drained if that part of the project would require a storm water management permit pursuant to section 420-D but for the exception for certain excavations in section 420-D, subsection 5. A storm water management permit pursuant to section 420-D is not required. [2005, c. 158, §13 (NEW).]

B. A waste discharge must meet standards and obtain authorization if required pursuant to section 413. [2005, c. 158, §13 (NEW).]

[2005, c. 158, §13 (RPR) .]

10. Traffic. The following provisions govern traffic.

B. Any excavation activity that generates 100 or more passenger car equivalents at peak hour must comply with the applicable permit requirements under Title 23, section 704-A. [1999, c. 468, §17 (AMD).]

[1999, c. 468, §17 (AMD) .]

11. Noise. Noise levels may not exceed applicable noise limits in rules adopted by the board.

[1995, c. 700, §35 (NEW) .]

12. Dust. Dust generated by activities at a quarry, including dust associated with traffic to and from a quarry, must be controlled by sweeping, paving, watering or other best management practices for control of fugitive emissions. Dust control methods may include calcium chloride as long as the manufacturer's labeling guidelines are followed. The department may not grant a variance from the provisions of this subsection. Visible emissions from a fugitive emission source may not exceed an opacity of 20% for more than 5 minutes in any one-hour period.

[2005, c. 158, §14 (AMD) .]

13. Reclamation. The affected land must be restored to a condition that is similar to or compatible with the conditions that existed before excavation. Reclamation may be conducted in accordance with the department's best management practices for erosion and sedimentation control and must include the following.

A. Highwalls, or quarry faces, must be treated in such a manner as to leave them in a condition that minimizes the possibility of rock falls, slope failures and collapse. A highwall that is loose must be controlled by the use of blasting or scaling, the use of safety benches, the use of flatter slopes or reduced face heights or the use of benching near the top of the face or rounding the edge of the face. [1995, c. 700, §35 (NEW).]

B. A vegetative cover must be established by seeding or planting within one year of the completion of excavation. Vegetative cover must be established on all affected land except for quarry walls and flooded areas. A vegetative cover must be established on safety benches, unless otherwise approved by the department. Topsoil must be placed, seeded and mulched within 30 days of final grading. Vegetative cover is acceptable if within one year of seeding:

- (1) The planting of trees and shrubs results in a permanent stand or a stand capable of regeneration and succession sufficient to ensure a 75% survival rate; and
- (2) The planting of all material results in permanent 90% ground cover.

Vegetative cover used in reclamation must consist of grasses, legumes, herbaceous or woody plants, shrubs, trees or a mixture of these. [1997, c. 364, §23 (AMD).]

C. All structures, once no longer in use, and all access roads, haul roads and other support roads must be reclaimed. [1995, c. 700, §35 (NEW).]

D. All affected lands must be reclaimed within 2 years after final grading. [1995, c. 700, §35 (NEW).]

E. Topsoil that is stripped or removed must be stockpiled for use in reclaiming disturbed land areas. The department may grant a variance from this paragraph if the applicant demonstrates that the soil is not needed for reclamation purposes. [1995, c. 700, §35 (NEW).]

F. The department may require a bond payable to the State with sureties satisfactory to the department or such other security as the department determines adequately secures compliance with this article, conditioned upon the faithful performance of the requirements set forth in this article. Other security may include a security deposit with the State, an escrow account and agreement, insurance or an irrevocable trust. In determining the amount of the bond or the security, the department shall take into consideration the character and nature of the overburden, the future suitable use of the land involved and the cost of grading and reclamation required. All proceeds of forfeited bonds or other security must be expended by the department for the reclamation of the area for which the bond was posted and any remainder returned to the operator. [1995, c. 700, §35 (NEW).]

G. The board may adopt or amend rules to carry out this subsection, including rules relating to operational or maintenance plans; standards for determining the reclamation period; annual revisions of those plans; limits, terms and conditions on bonds or other security; proof of financial responsibility of a person engaged in excavation activity or the affiliated person who guarantees performance; estimation of reclamation costs; reports on reclamation activities; and the manner of determining when the bond or other security may be discharged. [1995, c. 700, §35 (NEW).]

[1997, c. 364, §23 (AMD) .]

14. Blasting. The applicant must ensure that the blasting is conducted in accordance with Title 25, chapter 318.

A. The owner or operator shall use sufficient stemming, matting or natural protective cover to prevent flyrock from leaving property owned or under control of the owner or operator or from entering protected natural resources or natural buffer strips. Crushed rock or other suitable material must be used for stemming when available; native gravel, drill cuttings or other material may be used for stemming only if no other suitable material is available. [1995, c. 700, §35 (NEW).]

B. The maximum allowable airblast at any inhabited building not owned or controlled by the developer may not exceed 129 decibels peak when measured by an instrument having a flat response (+ or - 3 decibels) over the range of 5 to 200 hertz. [1995, c. 700, §35 (NEW).]

C. The maximum allowable airblast at an uninhabited building not owned or controlled by the developer may not exceed 140 decibels peak when measured by an instrument having a flat response (+ or - 3 decibels) over the range of 5 to 200 hertz. [1995, c. 700, §35 (NEW).]

D. Monitoring of airblast levels is required in all cases for which a preblast survey is required by paragraph F. The department may waive the monitoring requirement if the owner or operator secures the permission of affected property owners to increase allowable airblast levels on their property and the department determines that no protected natural resource will be adversely affected by the increased airblast levels. [1995, c. 700, §35 (NEW).]

E. If a blast is to be initiated by detonating cord, the detonating cord must be covered by crushed rock or other suitable cover to reduce noise and concussion effects. [1995, c. 700, §35 (NEW).]

F. A preblast survey is required for all production blasting and must extend a minimum radius of 1/2 mile from the blast site. The preblast survey must document any preexisting damage to structures and buildings and any other physical features within the survey radius that could reasonably be affected by blasting. Assessment of features such as pipes, cables, transmission lines and wells and other water supply systems must be limited to surface conditions and other readily available data, such as well yield and water quality. The preblast survey must be conducted prior to the initiation of blasting at the operation. The owner or operator shall retain a copy of all preblast surveys for at least one year from the date of the last blast on the development site.

(1) The owner or operator is not required to conduct a preblast survey if the department determines that no protected natural resource within the limits of the otherwise required survey is likely to be affected by blasting and production blasting will not occur within 2000 feet of any building not owned or under the control of the developer.

(2) The owner or operator is not required to conduct a preblast survey on properties for which the owner or operator documents the rejection of an offer by registered letter, return receipt requested, to conduct a preblast survey. Any person owning a building within a preblast survey radius may voluntarily waive the right to a survey.

(3) The owner or operator is not required to conduct a preblast survey if the owner or operator agrees to design all blasts so that the weight of explosives per 8 millisecond or greater delay does not exceed that determined by the equation $W=(D/D_s)^2$, where W is the maximum allowable weight of explosives per delay of 8 milliseconds or greater, D is the shortest distance between any area to be blasted and any inhabitable structure not owned or controlled by the developer and D_s equals 70 ft./lb.) $^{1/2}$. [2005, c. 158, §15 (AMD).]

G. Blasting may not occur in the period between sundown and sunrise the following day or in the period between 7:00 p.m. and 7:00 a.m., whichever is greater. Routine production blasting is not allowed in the daytime on Sunday. Detonation of misfires may occur outside of these times but must be reported to the department within 5 business days of the misfire detonation. Blasting may not occur more frequently than 4 times per day. Underground production blasting may be exempted from these requirements provided that a waiver is granted by the department. [1995, c. 700, §35 (NEW).]

H. Sound from blasting may not exceed the following limits at any protected location:

Number of Blasts Per Day	Sound Level Limit
1	129 decibels
2	126 decibels
3	124 decibels
4	123 decibels

[1995, c. 700, §35 (NEW).]

I. The maximum peak particle velocity at inhabitable structures not owned or controlled by the developer may not exceed the levels established in Table 1 in paragraph K and the graph published by the United States Department of the Interior in "Bureau of Mines Report of Investigations 8507," Appendix B, Figure B-1. The department may grant a variance to allow ground vibration levels greater than 2 inches per second on undeveloped property not owned or controlled by the applicant if the department determines that no protected natural resource, unusual natural area or historic site will be adversely affected by the increased ground vibration levels. If inhabitable structures are constructed on the property

after approval of the development and prior to completion of blasting, the developer immediately must notify the department and modify blasting procedures to remain in compliance with the standards of this subsection. [1995, c. 700, §35 (NEW).]

J. Based upon an approved engineering study, the department may grant a variance to allow higher vibration levels for certain buildings and infrastructures. In reviewing a variance application, the department shall take into account that the standards in this paragraph and paragraph I are designed to protect conventional low-rise structures such as churches, homes and schools. In cases of practical difficulty, the department may grant a variance from paragraph I if it can be demonstrated that no adverse impacts on existing infrastructures or protected natural resources, unusual natural areas or historic sites will result. [1995, c. 700, §35 (NEW).]

K. Table 1 of this paragraph or the graph published by the United States Department of the Interior in "Bureau of Mines Report of Investigations 8507," Appendix B, Figure B-1 must be used to evaluate ground vibration effects for those blasts for which a preblast survey is required.

- (1) Either Table 1 of this paragraph or the graph published by the United States Department of the Interior in "Bureau of Mines Report of Investigations 8507," Appendix B, Figure B-1 may be used to evaluate ground vibration effects when blasting is to be monitored by seismic instrumentation.
- (2) Blasting measured in accordance with Table 1 of this paragraph must be conducted so that the peak particle velocity of any one of the 3 mutually perpendicular components of motion does not exceed the ground vibration limits at the distances specified in Table 1 of this paragraph.
- (3) Seismic instruments that monitor blasting in accordance with Table 1 of this paragraph must have the instrument's transducer firmly coupled to the ground.
- (4) An owner or operator using Table 1 of this paragraph must use the scaled-distance equation, $W=(D/D_s)^2$, to determine the allowable charge weight of explosives to be detonated in any 8 millisecond or greater delay period without seismic monitoring, where W is equal to the maximum weight of explosives, in pounds, and D and D_s are defined as in Table 1 of this paragraph. The department may authorize use of a modified scaled-distance factor for production blasting if the owner or operator can demonstrate to a 95% confidence level, based upon records of seismographic monitoring at the specific site of the mining activity covered by the permit, that use of the modified scaled-distance factor will not cause the ground vibration to exceed the maximum allowable peak particle velocities of Table 1 of this paragraph.
- (5) Blasting monitored in accordance with the graph published by the United States Department of the Interior in "Bureau of Mines Report of Investigations 8507," Appendix B, Figure B-1 must be conducted so that the continuously variable particle velocity criteria are not exceeded.

The owner or operator may apply for a variance of the ground vibration monitoring requirement prior to conducting blasting at the development site if the owner or operator agrees to design all blasts so that the weight of explosives per 8 millisecond or greater delay does not exceed that determined by the equation $W=(D/D_s)^2$, where W is the maximum allowable weight of explosives per delay of 8 milliseconds or greater, D is the shortest distance between any area to be blasted and any inhabitable structure not owned or controlled by the developer and D_s equals 70 ft./lb.^{1/2}. As a condition of the variance, the department may require submission of records certified as accurate by the blaster and may require the owner or operator to document compliance with the conditions of this paragraph.

The following is Table 1.

Distance versus Peak Particle Velocity Method

Distance (D) from the blast area (feet)	Maximum allowable peak particle velocity (V _{max}) for ground vibration (in./sec.)	Scaled-distance factor (D _s) to be applied without seismic monitoring
0 to 300	1.25	50
301-5000	1.00	55
Greater than 5000	0.75	65

[1995, c. 700, §35 (NEW).]

L. A record of each blast, including seismographic data, must be kept for at least one year from the date of the last blast, must be available for inspection at the development or at the offices of the owner or operator if the development has been closed, completed or abandoned before the one-year limit has passed and must contain at a minimum the following data:

- (1) Name of blasting company or blasting contractor;
- (2) Location, date and time of blast;
- (3) Name, signature and social security number of blaster;
- (4) Type of material blasted;
- (5) Number and spacing of holes and depth of burden or stemming;
- (6) Diameter and depth of holes;
- (7) Type of explosives used;
- (8) Total amount of explosives used;
- (9) Maximum amount of explosives used per delay period of 8 milliseconds or greater;
- (10) Maximum number of holes per delay period of 8 milliseconds or greater;
- (11) Method of firing and type of circuit;
- (12) Direction and distance in feet to the nearest dwelling, public building, school, church or commercial or institutional building neither owned nor controlled by the developer;
- (13) Weather conditions, including factors such as wind direction and cloud cover;
- (14) Height or length of stemming;
- (15) Amount of mats or other protection used;
- (16) Type of detonators used and delay periods used;
- (17) The exact location of each seismograph and the distance of each seismograph from the blast;
- (18) Seismographic readings;
- (19) Name and signature of the person operating each seismograph; and
- (20) Names of the person and the firm analyzing the seismographic data. [1995, c. 700, §35 (NEW).]

M. All field seismographs must record the full analog wave form of each of the 3 mutually perpendicular components of motion in terms of particle velocity. All seismographs must be capable of sensor check and must be calibrated according to the manufacturer's recommendations. [1995, c. 700, §35 (NEW).]

N. If any blasting activity exceeds the standards in this subsection, the department must be notified within 48 hours of the blast event. Notification must include the name of the blasting operator, the location, date and time of the blasting event and a description of the specific occurrence that is in noncompliance with this subsection. Use of explosives at the quarry may be suspended by the department until the cause of the noncompliance is identified and appropriate steps are implemented to reduce, prevent or eliminate reoccurrence. [2007, c. 297, §10 (NEW).]

O. Prior to blasting, the owner or operator shall develop and implement a plan that provides an opportunity for prior notification of a planned blast for all persons located within 1,000 feet of the blast site. Notification may be by telephone, in writing, by public notice in a newspaper of general circulation in the area affected or by other means identified in the plan. The plan must be in writing and available for inspection by the department. [2007, c. 297, §11 (NEW).]

[2007, c. 297, §§10, 11 (AMD) .]

15. Lighting. Lighting must be shielded from adjacent highways and residential areas.

[2007, c. 616, §8 (NEW) .]

SECTION HISTORY

1995, c. 700, §35 (NEW). 1997, c. 364, §23 (AMD). 1999, c. 468, §17 (AMD). 1999, c. 556, §35 (AMD). 1999, c. 652, §10 (AMD). 2005, c. 158, §§11-15 (AMD). 2005, c. 561, §4 (AMD). 2007, c. 290, §12 (AMD). 2007, c. 297, §§10, 11 (AMD). 2007, c. 364, §3 (AMD). 2007, c. 616, §§6-8 (AMD). 2009, c. 293, §6 (AMD).

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